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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,634	11/13/2000	James Bernardin	1939-002	7190

7590 03/22/2007

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EXAMINER	
BARQADLE, YASIN M	
ART UNIT	**PAPER NUMBER**
2153	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	09/711,634	BERNARDIN ET AL.
	Examiner	Art Unit
	Yasin M. Barqadle	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 17 November 2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-86 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-86 are pending.

Priority

A claim for priority from provisional application number 60/203,719 has been made. The effective filing date for subject matter in the application is 12 May 2000.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 3, 14, 16, 22, 25, 43, 44-54, 69, 80 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "substantially continuous" in claims 1, 2, 3, 14, 25, 44-54, 69, and 80-86, is a relative term which renders the claim indefinite. The term "substantially continuous" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "behave substantially like screen saver programs" in claim 16 is a relative term which renders the claim indefinite. The term "behave substantially like screen saver programs" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is also unclear as to how activity monitor programs are to "behave like screen saver programs."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 3, 14, 25, 26, 33, 43, 44, 57-59, 69, 72, 76, 80, and 82-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor (U.S. Patent Number 6,098,091, hereinafter "Kisor") in view of Brit (U.S. Patent Number 6675209). Kisor discloses a method and system including at least one central computer that assigns tasks to idle workstations using availability schedules and computational capabilities. Kisor shows:

In referring to claim 1,

- Assigning tasks to a plurality of said worker processors by sending task-assignment messages, via said network, from said at least one supervisory processor to said plurality of worker processors:

  "The present invention is a method and apparatus for WAN computing including a central computer which coordinates tasks performed by a plurality of independent remote computers. The central computer polls the remote computers as to time of day the remote computers will be available and computational capabilities of the remote computers. The central computer then matches tasks to be completed with remote computers based on the results of the polling and transmits the task to the assigned remote computers at the appropriate time." (Kisor, col. 2, lines 21-30)
- Monitoring, on a continuous basis, the status of at least each of said plurality of assigned worker processors until each said processor completes its assigned task:

> *"During the period in which the remote computer is completing the tasks assigned by the central computer, the connection between the remote computer and the central computer is reestablished periodically to verify the status of the tasks and confirm that the task is being completed on schedule (Step 424). If during one of the verifications sessions, the remote computer fails to respond or indicates that there is difficulty completing the assigned tasks, the central computer will reassign and retransmit the task to another back-up remote computer (Step 428)."* (Kisor, col. 6, lines 43-54)

Although Kisor shows substantial features of the claimed invention, he does not explicitly a plurality of supervisory processors.

Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Kisor, as evidenced by Brit USPN. (6675209).

In analogous art, Brit shows a plurality (NTMS (fig. 1) and node devices 24-26 is interconnected via networking segments 40 and 42], that continuously monitor available system resource (abstract).

Giving the teaching of Brit, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Kisor by employing the system of Brit so that available network resource are monitored continuously in a realtime to detect when the network is inaccessible for the advantage of alerting network admins problems that inhibit the network's function.

In referring to claim 2, as understood,

- Monitoring, on a continuous basis, the status of at least each of said plurality of assigned worker processors comprises receiving status messages from at least each of said

plurality of assigned worker processors until each said processor completes its assigned task:

Kisor, col. 6, lines 43-54 (quoted above)

In referring to claim 3, as understood,

- Monitoring, on a continuous basis, the status of at least each of said plurality of worker processors further comprises detecting abnormalities in the operation of said plurality or assigned worker processors, and/or their associated network connections, by detecting an absence of expected status message(s) received by said at least one supervisory processor:

  Kisor, col. 6, lines 43-54 (quoted above)

In referring to claim 14, as understood,

- Detecting the presence of non-assigned-task-related activity on said worker processors:

  Kisor, col. 6, lines 43-54 (quoted above)

In referring to claim 25, as understood,

- Providing a pool of worker processors, each having installed worker processor software, and each connected to an always-on, peer-to-peer computer network; providing at least one supervisory processor, also connected to said always-on, peer-to-peer community network:

  "The central computer 104 executes a management program 144 to coordinate operation of the network. The central computer preferably is a high performance PC. The central computer and the remote computers operate in a peer-to-peer relationship, such that each computer requests time, and no computer exercises control over another computer. The peer-to-peer relationship allows the duties of the central computer 104 to be easily

transferred to a remote computer. Thus, in a preferred embodiment, the assignments handled by the central computer may be passed from the central computer 104 to a remote computer such that former remote computer 112 acts as the central computer. In order to pass off the tasks of the central computer, the former central computer must transfer the scheduler including the tasks to be completed and the resources available to the remote computer 112." (Kisor, col. 3, lines 45-60)

Kisor, Figure 1 shows a supervisory processor 134 in central computer 104

- Using said at least one supervisory processor to monitor, on a continuous basis, the status of worker processors expected to be engaged in the processing of assigned tasks; using said at least one supervisory processor to reassign tasks, as needed, to achieve uninterrupted processing of assigned tasks:

  "During the period in which the remote computer is completing the tasks assigned by the central computer, the connection between the remote computer and the central computer is reestablished periodically to verify the status of the tasks and confirm that the task is being completed on schedule (Step 424). If during one of the verifications sessions, the remote computer fails to respond or indicates that there is difficulty completing the assigned tasks, the central computer will reassign and retransmit the task to another back-up remote computer (Step 428)." (Kisor, col. 6, lines 43-54)

In referring to claim 26,

- Providing a pool of worker processors further includes ensuring that each of said worker processors is linked to said always-on, peer-to-peer computer network through a high-bandwidth connection:

  Kisor, Figure 1, shows that each of said worker processors is linked to said always-on, peer-to-peer computer network through a high-bandwidth connection

In referring to claim 33,

- Sending a status-request message to, and receiving a return acknowledgement from, each worker processor that is expected to be engaged in the processing of assigned tasks

Kisor, col. 6, lines 43-54 (quoted above)

In referring to claim 43,

- Detecting aberrant behavior among the worker processors expected to be engaged in the processing of assigned tasks; assigning tasks expected to be completed by said aberrant-behaving worker processor(s) to other available processor(s) in said worker processor pool:

  Kisor, col. 6, lines 43-54 (quoted above)

In referring to claim 44,

- Installing software that enables said network-connected processor to receive tasks from, and provide results to, one or more independent, network-connected resource(s):

  Kisor, col. 2, lines 21-30 (full quote above)

  Software that enables said network-connected processor to receive tasks from, and provide results to, one or more independent, network-connected resources is inherently implied in a system that that enables said network-connected processor to receive tasks from, and provide results to, one or more independent, network-connected resources
- Using the software installed on said network-connected processor to provide substantially continuous status information to an independent, network-connected resource:

  Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 57,

- A multiplicity of worker processors:

  Kisor, Figure 1 shows a multiplicity of worker processors 108, 112, 116, and 120
- At least one supervisory processor, configured to assign tasks to, and monitor the status of, said worker processors:

Kisor, col. 6, lines 43-54, see full quote above; Kisor, Figure 1 shows a supervisory processor 134 in central computer 104

- An always-on, peer-to-peer computer network linking said worker processors and said supervisory processor(s):
  Kisor, col. 3, lines 45-60 (see full quote above)
- At least one of said at least one supervisory processor(s) including a monitoring module, which monitors the status of worker processors expected to be executing assigned tasks, so as to ensure that the distributed computing system maintains always-live operation:
  Kisor, col. 3, lines 45-52 (see full quote above); a supervisory processor which monitors the status of worker processors expected to be executing assigned tasks inherently implies a monitoring module

In referring to claim 58,

- The monitoring module receives status messages from at least each of the worker processors expected to be executing assigned tasks:
  Kisor, col. 3, lines 45-52 (see full quote above)

In referring to claim 59,

- The monitoring module detects abnormalities in the operation of said worker processors expected to be executing assigned tasks, and/or their associated network connections, by detecting an absence of expected status messages received from said worker processors:
  Kisor, col. 3, lines 45-52 (see full quote above)

In referring to claim 69,

- A pool of worker processors, each having installed worker processor software, and each connected to an always-on, peer-to-peer computer network:
  Kisor, col. 3, lines 45-60 (see full quote above)

- At least one supervisory processor, also connected to said always-on, peer-to-peer computer network, and configured to assign tasks to said worker processors, monitor, on a substantially continuous basis, the status of worker processors expected to be engaged in the processing of assigned tasks and reassign tasks, as needed, to achieve substantially uninterrupted processing of assigned tasks:

  Kisor, col. 2, lines 21-30 (full quote above); Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 72,

- At least one supervisory processor monitors the status of worker processors expected to be engaged in the processing of assigned tasks by sending a status-request message to, and receiving a return acknowledgement from, each worker processor that is expected to be engaged in the processing of assigned tasks:

  Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 76,

- The at least one supervisory processor monitors the status of worker processors expected to be engaged in the processing of assigned tasks by periodically checking to ensure that a heartbeat message has been received, within a pre-selected frequency interval, from each worker processor that is expected to be engaged in the processing of assigned tasks:

  Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 80, as understood,

- At least one processor:

  Kisor, Figure 1 shows processor 134

- Memory:

  Kisor, Figure 1 shows memory 128

- At least one high-bandwidth interface to a computer network:

Kisor, Figure 1 shows a high-bandwidth interface to a computer network 140

- Worker processor software, configured to receive tasks via said high-bandwidth interface and to provide continuous status information via said high-bandwidth interface:
  Kisor, col. 6, lines 43-54 (full quote above)
  Worker processor software, configured to receive tasks via said high-bandwidth interface and to provide continuous status information via said high-bandwidth interface is inherently implied in a system that is configured to receive tasks via said high-bandwidth interface and to provide continuous status information via said high-bandwidth interface

In referring to claim 82,

- Continuous status information is provided by sending prompt responses to received status request messages:
  Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 83,

- Continuous status information is provided by sending status-update message in response to change in status:
  "If the assigned task is completed by the remote computer, notification of successful completion is transmitted back to the central computer which will update the scheduler to reflect that the remote computer is once again available (Step 546 and 550). The scheduler will also appropriately credit the billing account corresponding to the remote computer. If the task did not complete, the task will be attempted again using a different remote computer." (Kisor, col. 7, lines 38-40)

In referring to claim 84,

- Assignment of tasks to a plurality of worker processors via said network:
  Kisor, col. 2, lines 21-30 (full quote above)

- Monitoring, on a substantially continuous basis, of the status of at least each of said plurality of assigned worker processors until each said processor completes its assigned task:

  Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 85,

- A pool of worker processors, each having installed worker processor software, and each connected to an always-on, peer-to-peer computer network:

  Kisor, col. 3, lines 45-60 (see full quote above)
- Provide communication paths between said worker processors and at least one supervisory processor via said always-on, peer-to-peer computer network:

  Kisor, col. 3, lines 45-60 (see full quote above)
- Cause said at least one supervisory processor to monitor, on a continuous basis, the status of worker processors expected to be engaged in the processing of assigned tasks; cause said at least one supervisory processor to reassign tasks, as needed, to achieve uninterrupted processing of assigned tasks:

  Kisor, col. 6, lines 43-54 (full quote above)

In referring to claim 86, as understood,

- Work processor software to be installed that permits said processing element to receive task from, and provide results to, one or more independent, network-connected resource(s); said installed worker processor software to be executed and provide substantially continuous status information to one or more of said independent, network-connected resource(s):

  Kisor, col. 2, lines 21-30 (full quote above); Kisor, col. 6, lines 43-54 (full quote above)

  Software to be installed that permits said processing element to receive task from, and provide results to, one or more independent, network-connected resources is inherently implied in a system that permits said processing element to receive task from, and provide results to, one or more independent, network-connected resources

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-13, 27-32, 34-37, 49-51, 53, 54, 60-63, 70, 71, 73-75, and 77-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor.

In referring to claims 4-13, although Kisor shows substantial features of the claimed invention including the system of claim 3 (see 102 rejection above), Kisor does not explicitly show the frequency in which the supervisory computer polls the work computers. Kisor does not explicitly show the range of polling once every 0.001 – 600 seconds. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Kisor. Kisor shows a peer-to-peer network with each peer having a varying degree of bandwidth (Figure 3B) and varying amounts of time for tasks to be completed (Figure 3A). Task 314 in Figure 3A is shown to take 1hr. 15 min. (4500 seconds) and task 320 is shown to take 45 seconds. It would be obvious to poll the tasks that take longer less frequently (every 1-10 min) and the shorter tasks more frequently (every 0.001 – 60 sec).

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implement the system of Kisor so as to poll every 0.001 – 600 seconds, such implied by Kisor, in order to account for varying task lengths and bandwidth availability.

In referring to claim 27, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 100 kilobits/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 100 kilobits/sec to provide a consistent level of network performance.

In referring to claim 28 although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 250 kilobits/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 250 kilobits/sec to provide a consistent level of network performance.

In referring to claim 29, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 1 megabit/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 1 megabit/sec to provide a consistent level of network performance.

In referring to claim 30, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 10 megabits/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 10 megabits/sec to provide a consistent level of network performance.

In referring to claim 31, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 100 megabits/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 100 megabits/sec to provide a consistent level of network performance.

In referring to claim 32, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 1 gigabit/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 1 gigabit/sec to provide a consistent level of network performance.

In referring to claim 34, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every second to provide a consistent level of network performance.

In referring to claim 35, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every tenth of a second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every tenth of a second to provide a consistent level of network performance.

In referring to claim 36, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every hundredth of a second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every hundredth of a second to provide a consistent level of network performance.

In referring to claim 37, although Kisor shows substantial features of the claimed invention including the system of claim 25 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every millisecond. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every millisecond to provide a consistent level of network performance.

In referring to claim 49, although Kisor shows substantial features of the claimed invention including the system of claim 44 (see 102 rejection above), Kisor is silent as to how long the system waits for a response upon polling a work computer. Kisor does not explicitly show responding to status-request messages, received from said independent, network-connected resource, within one second. Nonetheless this timeout period is well known and it would obvious to implement the system disclosed by Kisor with a timeout period of one second to provide a consistent level of network performance.

In referring to claim 50, although Kisor shows substantial features of the claimed invention including the system of claim 44 (see 102 rejection above), Kisor is silent as to how long the system waits for a response upon polling a work computer. Kisor does not explicitly show responding to status-request messages, received from said independent, network-connected resource, within one tenth of a second. Nonetheless this timeout period is well known and it would obvious to implement the system disclosed by Kisor with a timeout period of one tenth of a second to provide a consistent level of network performance.

In referring to claim 51, although Kisor shows substantial features of the claimed invention including the system of claim 44 (see 102 rejection above), Kisor is silent as to how long the system waits for a response upon polling a work computer. Kisor does not explicitly show responding to status-request messages, received from said independent, network-connected resource, within one hundredth of a second. Nonetheless this timeout period is well known and it would obvious to implement the system disclosed by Kisor with a timeout period of one hundredth of a second to provide a consistent level of network performance.

In referring to claim 53, although Kisor shows substantial features of the claimed invention including the system of claim 44 (see 102 rejection above) and sending a response to a change in status of said network-connected processor: *"Otherwise, the remote computer will complete the task and reconnect to the central computer to inform the central computer on the completion of the task, at which time the central computer will instruct the remote computer whether to store the information for future retrieval or to transmit the processed information back to the central computer or other designated computer (Step 432)."* (Kisor, col. 6, lines 53-59), Kisor is silent as to how quickly the status-update message is sent. Kisor does not explicitly show sending a status-update message to said independent, network-connected resource within one second. Nonetheless this response period is well known and it would obvious to implement the system disclosed by Kisor to send a status-update message within one second to provide a consistent level of network performance.

In referring to claim 54, although Kisor shows substantial features of the claimed invention including the system of claim 44 (see 102 rejection above) and sending a response to a change in status of said network-connected processor: Kisor, col. 6, lines 53-59 (full quote above), Kisor is silent as to how quickly the status-update message is sent. Kisor does not explicitly show sending a status-update message to said independent, network-connected resource within one hundredth of a second. Nonetheless this response period is well known and it would obvious to

implement the system disclosed by Kisor to send a status-update message within one hundredth of a second to provide a consistent level of network performance.

In referring to claim 60, although Kisor shows substantial features of the claimed invention including the system of claim 57 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once each minute. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once each minute, to provide a consistent level of network performance.

In referring to claim 61, although Kisor shows substantial features of the claimed invention including the system of claim 57 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every ten seconds. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once each every ten seconds, to provide a consistent level of network performance.

In referring to claim 62, although Kisor shows substantial features of the claimed invention including the system of claim 57 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once each second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once each second, to provide a consistent level of network performance.

In referring to claim 63, although Kisor shows substantial features of the claimed invention including the system of claim 57 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every tenth of a second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every tenth of a second, to provide a consistent level of network performance.

In referring to claim 70, although Kisor shows substantial features of the claimed invention including the system of claim 69 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 250 kilobits/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 250 kilobits/sec to provide a consistent level of network performance.

In referring to claim 71, although Kisor shows substantial features of the claimed invention including the system of claim 69 (see 102 rejection above), Kisor does not explicitly show the minimum data rate of the peer-to-peer network. Kisor does not explicitly show the minimum network data rate to be at least 1 megabit/sec. Nonetheless this data rate is well known and it would obvious to implement the system disclosed by Kisor with a minimum data rate of 1 megabit/sec to provide a consistent level of network performance.

In referring to claim 73, although Kisor shows substantial features of the claimed invention including the system of claim 69 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every 10 seconds. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every 10 seconds, to provide a consistent level of network performance.

In referring to claim 74, although Kisor shows substantial features of the claimed invention including the system of claim 69 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least once every second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least once every second, to provide a consistent level of network performance.

In referring to claim 75, although Kisor shows substantial features of the claimed invention including the system of claim 69 (see 102 rejection above), Kisor does not explicitly show the polling of the worker computers is repeated at least 20 times each second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling rate of at least 20 times each second, to provide a consistent level of network performance.

In referring to claim 77, although Kisor shows substantial features of the claimed invention including the system of claim 76 (see 102 rejection above), Kisor does not explicitly show the polling frequency interval of the worker computers is less than one second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling frequency interval of less than one second, to provide a consistent level of network performance.

In referring to claim 78, although Kisor shows substantial features of the claimed invention including the system of claim 76 (see 102 rejection above), Kisor does not explicitly show the polling frequency interval of the worker computers is less than one tenth of a second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling frequency interval of less than one tenth of a second, to provide a consistent level of network performance.

In referring to claim 79, although Kisor shows substantial features of the claimed invention including the system of claim 76 (see 102 rejection above), Kisor does not explicitly show the polling frequency interval of the worker computers is less than one hundredth of a second. Nonetheless this polling rate is well known and it would obvious to implement the system disclosed by Kisor with a polling frequency interval of less than one hundredth of a second, to provide a consistent level of network performance.

Claims 38-41, 45-48, and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor in view of Olarig et al. (U.S. Patent Number 6,370,656, hereinafter "Olarig").

In referring to claim 38, although Kisor shows substantial features of the claimed invention, including the system of claim 25 (see 102 rejection above), Kisor does not show periodically checking for a heartbeat message at a predetermined frequency. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Olarig.

In analogous art, Olarig discloses a computer system with adaptive heartbeat. Olarig shows periodically checking to ensure that a heartbeat message has been received, within a pre-selected frequency interval, from each worker processor:

"The embodiment of FIG. 7 represents one example of a peer-to-peer relationship, or a configuration in which two similar devices, or "peers," are adapted to intercommunicate or transfer data or control signals from one peer to another... Because peer-to-peer devices are adapted to intercommunicate, any set of peer-to-peer devices may receive heartbeats from one or more other peers in an alternative embodiment. Hence, the present invention need not be limited to peer-to-peer heartbeat transactions between computer systems but may be incorporated into any peer-to-peer configuration such as I/O devices or between any other desired devices." (Olarig, col. 20, lines 22-40)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to check for heartbeat messages, such as taught by Olarig, in order to provide fault tolerance.

In referring to claim 39, although Kisor in view of Olarig shows substantial features of the claimed invention, including the system of claim 38, Kisor in view of Olarig is silent as to the frequency of the heartbeat message. Kisor does not explicitly show the frequency is less than one second. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Kisor in view of Olarig.

In referring to claim 40, although Kisor in view of Olarig shows substantial features of the claimed invention, including the system of claim 38, Kisor in view of Olarig is silent as to the frequency of the heartbeat message. Kisor does not explicitly show the frequency is less than one tenth of a second. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Kisor in view of Olarig.

In referring to claim 41, although Kisor in view of Olarig shows substantial features of the claimed invention, including the system of claim 38, Kisor in view of Olarig is silent as to the frequency of the heartbeat message. Kisor does not explicitly show the frequency is less than one hundredth of a second. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Kisor in view of Olarig.

In referring to claim 42, although Kisor in view of Olarig shows substantial features of the claimed invention, including the system of claim 38, Kisor in view of Olarig is silent as to the frequency of the heartbeat message. Kisor does not explicitly show the frequency is less than one millisecond. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Kisor in view of Olarig.

In referring to claim 45, although Kisor shows substantial features of the claimed invention, including the system of claim 44 (see 102 rejection above), Kisor does not show sending a heartbeat message to said independent, network-connected resource at least once every second. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Olarig.

In analogous art, Olarig discloses a computer system with adaptive heartbeat. Olarig shows sending a heartbeat message to said independent, network-connected resource at least once every second: Olarig, col. 20, lines 22-40 (full quote above). Although, Olarig does not explicitly show the frequency to be once every second, this interval would be obvious to a person of ordinary skill in the art.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to check for heartbeat messages, such as taught by Olarig, in order to provide fault tolerance.

In referring to claim 46, although Kisor shows substantial features of the claimed invention, including the system of claim 44 (see 102 rejection above), Kisor does not show sending a heartbeat message to said independent, network-connected resource at least once every tenth of a second. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Olarig.

In analogous art, Olarig discloses a computer system with adaptive heartbeat. Olarig shows sending a heartbeat message to said independent, network-connected resource at least once every tenth of a second: Olarig, col. 20, lines 22-40 (full quote above). Although, Olarig does not explicitly show the frequency to be once every tenth of a second, this interval would be obvious to a person of ordinary skill in the art.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to check for heartbeat messages, such as taught by Olarig, in order to provide fault tolerance.

In referring to claim 47, although Kisor shows substantial features of the claimed invention, including the system of claim 44 (see 102 rejection above), Kisor does not show sending a heartbeat message to said independent, network-connected resource at least once every hundredth of a second. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Olarig.

In analogous art, Olarig discloses a computer system with adaptive heartbeat. Olarig shows sending a heartbeat message to said independent, network-connected resource at least once every hundredth of a second: Olarig, col. 20, lines 22-40 (full quote above). Although, Olarig does not explicitly show the frequency to be once every hundredth of a second, this interval would be obvious to a person of ordinary skill in the art.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to check for heartbeat messages, such as taught by Olarig, in order to provide fault tolerance.

In referring to claim 48, although Kisor shows substantial features of the claimed invention, including the system of claim 44 (see 102 rejection above), Kisor does not show sending a heartbeat message to said independent, network-connected resource at least once every millisecond. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Olarig.

In analogous art, Olarig discloses a computer system with adaptive heartbeat. Olarig shows sending a heartbeat message to said independent, network-connected resource at least once every millisecond: Olarig, col. 20, lines 22-40 (full quote above). Although, Olarig does not explicitly show the frequency to be once every millisecond, this interval would be obvious to a person of ordinary skill in the art.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to check for heartbeat messages, such as taught by Olarig, in order to provide fault tolerance.

In referring to claim 81, although Kisor shows substantial features of the claimed invention, including the system of claim 80 (see 102 rejection above), Kisor does not show continuous status information is provided by sending periodic heartbeat messages. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Olarig.

In analogous art, Olarig discloses a computer system with adaptive heartbeat. Olarig shows continuous status information is provided by sending periodic heartbeat messages: Olarig, col. 20, lines 22-40 (full quote above)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to check for heartbeat messages, such as taught by Olarig, in order to provide fault tolerance.

Claims 15, 17-19, 21-24, 64, 65, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor in view of Glasser et al. (U.S. Patent Number 6,519,639, hereinafter "Glasser").

In referring to claim 15 although Kisor shows substantial features of the claimed invention, Kisor does not show running an activity monitor program on each of said assigned worker processors. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Glasser.

In analogous art, Glasser discloses a system and method for activity monitoring and reporting in a computer network. Glasser shows running an activity monitor program on each of said assigned worker processors: *"The present invention is embodied in a system and method for detecting user operation of a user input device and providing an activity notification to other computers in a computer network. This is particularly useful in an instant messaging session where two or more participants may be preparing messages for other participants in the instant messaging session. The system comprises a user input device, such as a keyboard, microphone, mouse, or the like, and an activity monitor to detect user activation of the user input device. The activity monitor will generate a signal indicative of user activation of the input device. A timer measures a first predetermined time interval and, if user activity is detected within the first predetermined time interval, a message processor generates an activity message at the end of the first predetermined time interval and transmits the activity message to at least one recipient with whom the user is communicating via the computer network."* (Glasser, col. 1, line 64 – col. 2, line 13)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to provide a an activity monitor program, such as taught by Glasser, in order to determine if the tasks on a worker computer should be reassigned.

In referring to claim 17, Kisor in view of Glasser shows,

- The activity monitor programs running on each of said assigned worker processors send, in response to detection of keyboard activity a message to at least one of said at least one supervisory processor(s):
  Glasser, col. 1, line 64 – col. 2, line 13 (full quote above)

In referring to claim 18, Kisor in view of Glasser shows,

- The activity monitor programs running on each of said assigned worker processors send, in response to detection of mouse activity a message to at least one of said at least one supervisory processor(s):
  Glasser, col. 1, line 64 – col. 2, line 13 (full quote above)

In referring to claim 19, Kisor in view of Glasser shows,

- The activity monitor programs running on each of said assigned worker processors send, in response to detection of pointer activity a message to at least one of said at least one supervisory processor(s)
  Glasser, col. 1, line 64 – col. 2, line 13 (full quote above); a mouse is a pointer

In referring to claim 21, Kisor in view of Glasser shows,

- The activity monitor programs running on each of said assigned worker processors send, in response to detection of voice activity a message to at least one of said at least one supervisory processor(s)
  Glasser, col. 1, line 64 – col. 2, line 13 (full quote above)

In referring to claim 22, Kisor in view of Glasser shows,

- The activity monitor programs running on each of said assigned worker processors send, in response to detection of non-assigned-task-related processes, a message to at least one of said at least one supervisory processor(s)

Glasser, col. 1, line 64 – col. 2, line 13 (full quote above)

In referring to claim 23, Kisor in view of Glasser shows,

- Determining, in response to an activity monitor message received by at least one of said at least one supervisory of said processor(s), that at least one of said assigned worker processors is undertaking non-assigned-task-related activity:
  Glasser, col. 1, line 64 – col. 2, line 13 (full quote above)

In referring to claim 24, Kisor in view of Glasser shows,

- The activity monitor message is generated by an activity monitor program running on one of said assigned worker processors:
  Glasser, col. 1, line 64 – col. 2, line 13 (full quote above)

In referring to claims 64 and 65 although Kisor shows substantial features of the claimed invention, Kisor does not show a monitoring module detects the presence of non-assigned-task-related activity on the worker processors expected to be executing assigned tasks. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Kisor as evidenced by Glasser.

In analogous art, Glasser discloses a system and method for activity monitoring and reporting in a computer network. Glasser shows a monitoring module detects the presence of non-assigned-task-related activity on the worker processors expected to be executing assigned tasks: *"The present invention is embodied in a system and method for detecting user operation of a user input device and providing an activity notification to other computers in a computer network. This is particularly useful in an instant messaging session where two or more participants may be preparing messages for other participants in the instant messaging session. The system comprises a user input device, such as a keyboard, microphone, mouse, or the like, and an activity monitor to detect user activation of the user input device. The activity monitor will generate a signal indicative of user activation of the input device. A timer measures a first predetermined time interval and, if user activity is detected within the first predetermined time*

interval, a message processor generates an activity message at the end of the first predetermined time interval and transmits the activity message to at least one recipient with whom the user is communicating via the computer network." (Glasser, col. 1, line 64 – col. 2, line 13)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor so as to provide a monitoring module, such as taught by Glasser, in order to determine if the tasks on a computer should be reassigned.

In referring to claim 67,

- The activity monitor programs detect keyboard activity; mouse activity; pointer activity; touch-screen activity; voice activity; non-assigned-task-related processes:
  Glasser, col. 1, line 64 – col. 2, line 13 (quoted above)

In referring to claim 68,

- The activity monitor programs detect at least three of the following types of non-assigned-task-related activity: keyboard activity; mouse activity; pointer activity; touch-screen activity; voice activity; non-assigned-task-related processes:
  Glasser, col. 1, line 64 – col. 2, line 13 (quoted above)

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor in view of Glasser and in further view of Shieh (U.S. Patent Number 6,067,079, hereinafter "Shieh"). Although Kisor in view of Glasser shows substantial features of the claimed invention, Kisor in view of Glasser does not show III. Nonetheless this feature is well known in the art and would have been an obvious (addition/modification) to the system disclosed by II as evidenced by Shieh.

In analogous art, Shieh discloses a virtual pointing device for touchscreens. Shieh shows that a mouse can be replaced by a touchscreen: *"Conventional touchscreens allow the user's finger or a pointing device to replace the conventional mouse and mouse pointer"* (Shieh, col. 2, lines 4-6)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Kisor in view of Glasser so as to replace the mouse with a touch screen, such as taught by Shieh, in order to permanently attach the navigation tool to the computer.

Conclusion

ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The prior made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yasin Barqadle whose telephone number is 571-272-3947. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained form the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or public PAIR system. Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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